

**Work Order ID 85825**

June-15-12 1:32:38 PM

**\*85825\***

Page 1

Item ID: D206-642-541

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop

**\*NS2\***Start Date: 15/06/2012 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 29/06/2012 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals:	Process Plan:	<i>MLJ</i>	Date: 12/06/15	Tooling:	Date:	Run	Start	<b>*NR1*</b>
	QC:		Date:	SPC (Y/N):	Date:		Stop	<b>*NR2*</b>

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D3274

D

100

0.00

**\*100\***

DOCUMENT CONTROL

DC

Document Control

Memo

0.00

Photocopy bluefile &amp; type labels per PPP D206-642-541

CHG003

*N/A JG*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**Work Order ID 85825**

June-15-12 1:32:38 PM

**\*85825\***

Page 2

Item ID: D206-642-541

Accept

**\*N900040100\***

Setup

Start

**\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop

**\*NS2\***Start Date: 15/06/2012 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 29/06/2012 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	<b>*NR1*</b>
	QC:	Date:	SPC (Y/N):	Date:		Stop	<b>*NR2*</b>

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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110

**\*110\***

Skidtubes

Skidtubes

Memo

0.00

\*\*\*\*VERIFY AND INSPECT THE MATERIAL PRIOR TO USE\*\*\*\*

1- Bend FWD end of tube using bend prog D3274 FWD and foilo 10 as per dwg D3274, cut fwd end of tube with saw table setup D3274.

2- remove fwd indexing ridge as per dwg D3274. Prepare for welding

3- weld fwd cap as per dwg D3274 and QSI004  
AR Aluminum Rod Batch: *m20164* 3 8612-0716

4- grind fwd cap weld on top surface only

5- Cut AFT end of tube at 170.9" as per dwg D3274 and deburr end.

6-Drill Aft cap pilot hole using DT8025

7-Cleco DT8025 in position and install pilot hole drill Jig DT8742A,B,C,D.  
Drill 3/16" pilot holes as per Dwg D3274

8 -Remove inner indexing ridge on aft end of skidtube as per Dwg D3274 scribe batch #

9 -Open aft end cap holes to .00.208" as per Dwg D3274. Deburr aft end.

*DP 12-7-12**DP 12-7-13**DP 12/07/16*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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June-15-12 1:32:38 PM

Item ID: D206-642-541

Revision ID:

Item Name: Replacement Skidtube

Start Date: 15/06/2012 Start Qty: 1.00 \*1\*

Required Date: 29/06/2012 Req'd Qty: 1.00 \*1\*

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

\*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop

\*NR2\*

Sequence ID/  
Work Center IDOperation  
Description

114

\*114\*

QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

116

\*116\*

QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

Memo

120

\*120\*

HandFinish

Hand Finishing

Chemical Conversion Coat per QSI005 4.1

0.00

Memo

0.00

**\*85825\***

Accept

**\*N900040100\***

Setup

Start

**\*NS1\***

Stop

**\*NS2\***

Cust Item ID:

Customer:

Tooling:

Date:

Run

Start

**\*NR1\***

SPC (Y/N):

Date:

Stop

**\*NR2\***Set Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

0.00

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**Work Order ID 85825**

June-15-12 1:32:38 PM

**\*85825\***

Page 4

**Item ID:** D206-642-541**Accept****\*N900040100\*****Setup****Start****\*NS1\*****Revision ID:****Item Name:** Replacement Skidtube**Stop****\*NS2\*****Start Date:** 15/06/2012 **Start Qty:** 1.00 **\*1\*****Cust Item ID:****Required Date:** 29/06/2012 **Req'd Qty:** 1.00 **\*1\*****Customer:****Reference:****Approvals:** **Process Plan:****Date:****Tooling:****Date:****Run****Start****\*NR1\*****QC:****Date:****SPC (Y/N):****Date:****Stop****\*NR2\*****Sequence ID/  
Work Center ID**

130

**\*130\***

QC

Quality Control

**Operation  
Description**

QC7-Inspect Chemical Conversion Coat

**Set Up/  
Run Hours****Tool ID****Tool #****Plan  
Code****Accept  
Qty****Reject  
Qty****Reject  
Number****Insp.  
Stamp**WAS  
03  
08

DP

12-7-17

150

**\*150\***

Skidtubes

Skidtubes

0.00

CF 12-7-17

Skidtubes

**Memo**

0.00

1-Open Ø0.313" and 0.375" crossbolt spacer holes as per Dwg D3274

2-Deburr crossbolt spacer holes as per Dwg D3274 and blow out chips from  
inside the tube

3-Bond web in place as per Dwg D3274 &amp; QSI 015.

A/RSikaflex-291 m122170Sikaflex expire date: 13-3-14Start: 12-7-17 Time: 13:30Finish: 12-7-17 Time: 2:00

(Adhere for 12 hours)

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 85825

June-15-12 1:32:38 PM

Item ID: D206-642-541

Accept

\*85825\*

Revision ID:

Item Name: Replacement Skidtube

Start Date: 15/06/2012 Start Qty: 1.00 \*1\*

Required Date: 29/06/2012 Req'd Qty: 1.00 \*1\*

\*N900040100\*

Setup Start

\*NS1\*

Stop \*NS2\*

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	*NR1*
	QC:	Date:	SPC (Y/N):	Date:		Stop	*NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160 QC5- Inspect part completeness to step on W/O

0.00

\*160\*

QC

Quality Control

DAS  
03  
89

DP/12-7-18

170

\*170\*

Skidtubes

Skidtubes

0.00

Memo

0.00

Skidtubes

1-Bend AFT end of tube using bend prog. D3274 AFT as per dwg D3274. Install drop pins in crossbolt spacer holes to maintain web position.

> SAD 12-07-18

2- DRILL PILOT HOLES FOR WEARPLATES USING D3274-1T2  
OPEN HOLES TO .297". Deburr

CF 12-7-19

3-DRILL TOE PIN HOLE .640" DIA AS PER DWG USING DT8935 FWD  
END OF TUBE  
DEBURR INSIDE OF HOLE AS NECESSARY (DO NOT ENLARGE HOLES)  
REMOVE ANY FOREIGN OBJECTS INSIDE OF TUBES

4- Countersink crossbolt spacer holes as per Dwg D3274

5- prepare for welding

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 85825

June-15-12 1:32:38 PM

\*85825\*

Page 6

Item ID: D206-642-541

Accept

\*N900040100\*

Setup

Start

\*NS1\*

Revision ID:

Item Name: Replacement Skidtube

Stop

\*NS2\*

Start Date: 15/06/2012 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 29/06/2012 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

\*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop

\*NR2\*

Sequence ID/  
Work Center ID

180

\*180\*

QC

Quality Control

Operation  
Description

QC5- Inspect part completeness to step on W/O

Set Up/  
Run Hours

0.00

30°  
46°

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

190

\*190\*

Skidtubes

Skidtubes

Memo

0.00

0.00

Skidtubes

1-Insert D2649 & D3275-1 crossbolt spacers. Weld as per QSI 004 and Dwg D3274. Remember to back drill each hole before welding the other side. Use aluminum rod

A/R Aluminum Rod 12/23/24

*AE 12/7/24*

3-Grind cross bolt welds flush as per Dwg D3274. → CF 12-7-25

4-Counterbore 5/16" x 0.750" deep as per Dwg D3274 and deburr.

*DP 12-7-26*

Pto →

W/O: 85 825		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D206-642-541 PAR #: \_\_\_\_\_ Fault Category: Landing Gear / Skid tubes NCR: Yes No DQA: Not Date: 12/08/17  
 Resolution: Acceptable. Disposition: Acceptable. QA: N/C Closed: Not Date: 12/08/20

NCR: 12-1699		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/07/20	# 190.4	Found at inspection that the counter bores were too deep measured $0.820^+0.030^-0.30$ " should be $0.780^+0.030^-0.30$ " R.C. Counter bore tool was not set correctly. operator error 100% - PROCESS.	<u>DAS</u> 12/7/20	Acceptable. per Email From Chris P to David S. July 27 <sup>th</sup> , 2022. See Attached Email	<u>12-7-27</u>	<u>DAS</u> 12/7/20	<u>DAS</u> 12/7/20	<u>DAS</u> 12/7/20
				RC: SHOULD HAVE NOTE TO OPERATOR TO CHECK TO PRIOR TO USING				

NOTE: Date &amp; initial all entries

## Linda Lacelle

---

**From:** Chris Provencal <cprovencal@dartaero.com>  
**Sent:** July-27-12 11:15 AM  
**To:** David Shepherd  
**Cc:** psmith@dartaero.com; 'L Lacelle'; 'Isam El-Kassis'; 'Eric Downing'; Mike Petsche  
**Subject:** RE: D206 skids

David,

The affected tubes are several float (-541) and regular tubes (-351). The float holes aren't counterbored and are unaffected. As the crossbolt spacers are not loaded except in bearing by the bushings, the additional length of the counterbore would have no effect on the strength of the crossbolt spacer from regular loading conditions. There would be a small reduction in buckling strength from sideways crushing loads, which doesn't represent a critical loading condition per the FAR requirements.

I will accept these tubes based on that rational. This email is an FYI in case you have an objection.

-Chris

---

**From:** Eric Downing [<mailto:edowning@dartaero.com>]  
**Sent:** Friday, July 27, 2012 8:34 AM  
**To:** 'Provencal, Chris'  
**Cc:** [psmith@dartaero.com](mailto:psmith@dartaero.com); 'L Lacelle'; Isam El-Kassis  
**Subject:** D206 skids  
**Importance:** High

Good morning Chris

I need to see you as soon as you read this message I have found the counter bore depth on QTYX9 D206 skids are too deep. I am measuring 0.820"-0.830" and it should be at 0.75+/-0.030". I have 6 in progress and 3 already painted and assembled. What happened was that I had inspected some 206 skids and found that the counter bore was correct but I didn't know that they had changed the counter bore part way through the day and was not set up correctly so I had assumed that they were still the same depth and when I measured the first one today like I do always the depth was not correct at all.

I need to know if this will be acceptable or that we need to rework all the skids.

Thanks  
Eric Downing  
QC Coordinator  
Dart Aerospace LTD

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION		AGAINST DEPARTMENT/PROCESS									
				Rework Scrap Use-as-is Work Order Update	Skid-tube Machining Thermoforming Large Fab	Crosstube Small Fab Finishing Composite	Water Jet Prod. Eng. Coor. Rec/Store/Packaging Supplier	Engineering Quality Other							
Root Cause		Date	Step	Qty	Description of work order update or Non-conformance		Initial Chief Eng	Action Description		Sign & Date	Verification	QC Inspector			
Doc/Data															
Equip/Tooling															
Operator															
Material															
Setup															
Other															
Process															
Supplier															
Training															
Unapproved															
<b>FAULT CATEGORY</b>															
Landing Gear Bending Centre Not Concentric to O/S Cracks Crushed/Crimped. Cuffs Heat Treat Inspection Strip in Tube Ripples in Bend Torque Waves in Extrusion Turning Sequence Wave/Twist in Tube				General Bend BOM/Route Broken/Damaged Burrs Contamination Countersink Cut Too Short Drill Holes Drawing Finish Folio				Grain Hardware Inspection Incomplete Instructions Incomplete/Unclear Maintenance Mislabeled Misread Offset Out of Calibration Out of Sequence Outside Dimensions				Ovalized Over/Under tolerance Part Incorrect Part Lost/Missing Part Moved Positioned Wrong Power Loss/Surge		Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled	
														<input type="checkbox"/> Other	

## Linda Lacelle

---

**From:** Chris Provencal <cprovencal@dartaero.com>  
**Sent:** July-27-12 11:15 AM  
**To:** David Shepherd  
**Cc:** psmith@dartaero.com; 'L Lacelle'; 'Isam El-Kassis'; 'Eric Downing'; Mike Petsche  
**Subject:** RE: D206 skids

David,

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I will accept these tubes based on that rational. This email is an FYI in case you have an objection.

-Chris

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**Sent:** Friday, July 27, 2012 8:34 AM  
**To:** 'Provencal, Chris'  
**Cc:** [psmith@dartaero.com](mailto:psmith@dartaero.com); 'L Lacelle'; Isam El-Kassis  
**Subject:** D206 skids  
**Importance:** High

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I need to know if this will be acceptable or that we need to rework all the skids.

Thanks  
Eric Downing  
QC Corrdinator  
Dart Aerospace LTD

NCR: Yes / No

DQA: Date:

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS										
			Rework Scrap Use-as-is Work Order Update	Skid-tube Machining Thermoforming Large Fab	Crosstube Small Fab Finishing Composite	Water Jet Prod. Eng. Coor. Rec/Store/Packaging Supplier	Engineering Quality Other									
Part No. _____																
NCR No. _____																
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector							
Doc/Data																
Equip/Tooling																
Operator																
Material																
Setup																
Other																
Process																
Supplier																
Training																
Unapproved																
FAULT CATEGORY																
Landing Gear				General												
Bending	General			Bend	General			Grain	General			Ovalized	General			Pressure/Forced
Centre Not Concentric to O/S				BOM/Route				Hardware				Over/Under tolerance				Temperature/Cure
Cracks				Broken/Damaged				Inspection Incomplete				Part Incorrect				Weld
Crushed/Crimped.				Burrs				Instructions Incomplete/Unclear				Part Lost/Missing				Wrong Stock Pulled
Cuffs				Contamination				Maintenance				Part Moved				
Heat Treat				Countersink				Mislabeled				Positioned Wrong				
Inspection Strip in Tube				Cut Too Short				Misread				Power Loss/Surge				
Ripples in Bend				Drill Holes				Offset								Other
Torque Waves in Extrusion				Drawing				Out of Calibration								
Turning Sequence				Finish				Out of Sequence								
Wave/Twist in Tube				Folio				Outside Dimensions								

Work Order ID 85825

June-15-12 1:32:38 PM

\*85825\*

Page 7

Item ID: D206-642-541

Accept

\*N900040100\*

Setup

Start

\*NS1\*

Revision ID:

Item Name: Replacement Skidtube

Stop

\*NS2\*

Start Date: 15/06/2012 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 29/06/2012 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run

Start

\*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop

\*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

200

QC5- Inspect part completeness to step on W/O

\*200\*

QC

Quality Control

Set Up/  
Run Hours

0.00

16  
9-89

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

210

QC10- Inspect visual per QSI004- ground welds

0.00

16  
9-89

17/07/13

\*210\*

QC

Quality Control

220

Pressure Wash per QSI005 4.3

0.00

\*220\*

HandFinish

Hand Finishing

Memo

0.00

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch

1 76 12-730

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 85825

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\*85825\*

Page 8

Item ID: D206-642-541

Accept

\*N900040100\*

Setup Start

\*NS1\*

Revision ID:

Item Name: Replacement Skidtube

Stop

\*NS2\*

Start Date: 15/06/2012 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 29/06/2012 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

\*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop

\*NR2\*

Sequence ID/  
Work Center ID

230

\*230\*

Powdercoat

Powder Coating

W121841

Operation  
Description

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

Set Up/  
Run Hours

0.00

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

1X4

MF  
12/07/10

240

\*240\*

QC

Quality Control

QC3- Inspect Part Finish

Memo 2:00 0.00  
START TIME: 3200  
OVEN TEMPERATURE: 230  
FINISH TIME: 2:30

0.00

1 8

12/08/01

250

\*250\*

HandFinish

Hand Finishing

HandFinishing

Memo

0.00

1 8

12/08/01

1-Install Nut Plate as per Dwg D3274. Apply LPS-PROCYON to Nut Plate and rivets.

A/RN/ALPS-PROCYON 114596

2-Install inserts as per Dwg D3274. Use a drop of Sikaflex inside insert holes a A/RSikaflex-291 122130

Sikaflex expire date: 14/03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 85825

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\*85825\*

Page 9

Item ID: D206-642-541

Accept

\*N900040100\*

Setup Start

\*NS1\*

Revision ID:

Item Name: Replacement Skidtube

Stop

\*NS2\*

Start Date: 15/06/2012 Start Qty: 1.00 \*1\*

Cust Item ID:

Required Date: 29/06/2012 Req'd Qty: 1.00 \*1\*

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

\*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop

\*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

260

QC5- Inspect part completeness to step on W/O

0.00

0.00

0.00

0.00

0.00

0.00

0.00

\*260\*

QC

Memo

DAS  
16  
8-08

12/08/01

Quality Control

Inspect Nut Plate & Inserts

270

HAND FINISHING RESOURCE #1

0.00

\*270\*

HandFinish

Memo

1 8 12/08/01

Hand Finishing

1-Install wearpads & gaskets as per Dwg D3274.

0.00

2-Install ring as per Dwg D3274

A/RSikaflex-291 122130

Sikaflex expire date:

14/03

3-Inspect for foreign objects as per QSI 024

4-Spray inside of tube on both sides of web with LPS-3

A/R LPS-3 Batch: N/A

5-Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/RSikaflex-291 122130

Sikaflex expire date:

14/03

Prog on 114596

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector	
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

**Work Order ID 85825**

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**\*85825\***

Page 10

Item ID: D206-642-541

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop

**\*NS2\***Start Date: 15/06/2012 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 29/06/2012 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

**\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop

**\*NR2\***Sequence ID/  
Work Center IDOperation  
Description

280

QC5- Inspect part completeness to step on W/O

**\*280\***

QC

Quality Control

Memo

Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
0.00	(PAS 15 S-03)	7/06/06					
0.00							

290

**\*290\***

Packaging

Packaging

Identify as per dwg &amp; Stock Location: \_\_\_\_\_

0.00

PP 88360

12/8/14

Memo

0.00

300

**\*300\***

QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

12/8/16

MLJ 12/8/14

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector	
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

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Page 1

Work Order ID: 85825

\*85825\*  
\*D206-642-541\*

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:B05.09.23Revised per D206-642 Rev. JKJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC  
 IPP Rev:F 08-06-02 add comment DD verified by:EC  
 IPP Rev:G 08-10-09 revise details DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2600-1-190

\*D2600-1-190\*

Extrusion Round 3" 206

Manufactured	No	110	Each	106.0000	1	1	**
--------------	----	-----	------	----------	---	---	----

 12-7-12

Location      Loc Qty      Loc Code

HALL      45

69622      45

LG      61

76912      61

D3285-1

\*D3285-1\*

Cap

Manufactured	No	110	Each	42.0000	1	1	**
--------------	----	-----	------	---------	---	---	----

 1

AE 12-07-14

Location      Loc Qty      Loc Code

LG002      42

52511      1

52647      41

D3282-041

\*D3282-041\*

Float Web (206L/407)

Manufactured	No	150	Each	9.0000	1	1	**
--------------	----	-----	------	--------	---	---	----

 1

CF 12-7-11

Location      Loc Qty      Loc Code

LG      9

82651      9

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector	
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

# Picklist Print

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Work Order ID: 85825

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

\*85825\*  
\*D206-642-541\*

Start Date: 15/06/2012

Start Qty: 1.00

Required Date: 29/06/2012

Required Qty: 1.00

D2649

Manufactured No

190

Each

181 0000

12

12

\*\*

\*D2649\*

Cross Bolt Spacer

BE12/07/24  
85586 \* 12

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	38	
77574	2	
79502	8	
79503	17	
79564	4	
79565	7	
LG001	143	
65317	1	
68224	2	
68507	11	
71355	2	
72704	2	
72841	11	
73390	8	
73857	21	
73858	53	
73859	4	
73860	4	
78020	6	
78583	2	
79566	16	

D3275-1

Manufactured No

190

Each

105.0000

12

12

\*\*

\*D3275-1\*

Crossbolt Spacer

BE12/07/24

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
LG	40	
85418	40	
LG002	65	
66930	1	
83264	64	

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Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

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Work Order ID: 85825

**\*85825\***

Parent Item: D206-642-541

**\*D206-642-541\***

Parent Item Name: Replacement Skidtube

Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

CR3212-4-03

Purchased

No

250

Each

1,248.000

2

2

\*\*

2

(2)

12/08/01

**\*CR3212-4-03\***

Cherry Rivet

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP002	340	
-------	-----	--

114859 ✓	340	
----------	-----	--

ST331	908	
-------	-----	--

110139	2	
--------	---	--

119017	906	
--------	-----	--

D3415-041

Manufactured

No

250

Each

31.0000

1

1

\*\*

1

(2)

12/08/01

**\*D3415-041\***

Nut Plate

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

ST042	31	
-------	----	--

82151 ✓	31	
---------	----	--

CCR264SS3-3

Purchased

No

250

Each

320.0000

2

2

\*\*

2

(2)

12/08/01

**\*CCR264SS3-3\***

Cherry Rivet

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

ST331	320	
-------	-----	--

113973	2	
--------	---	--

117849 ✓	77	
----------	----	--

119017	241	
--------	-----	--

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

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Work Order ID: 85825

\*85825\*

Parent Item: D206-642-541

\*D206-642-541\*

Parent Item Name: Replacement Skidtube

Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-130

Purchased

No

250

Each

1,737.000

78

78

\*\*

78

(P)

12/08/01

\*AI S4-1032-130\*

Insert

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST280 122474✓	205	
119084	116	
120671	89	
ST281	44	
120807	36	
120837	8	
ST282	1488	
121269	1488	

D3536-15

Manufactured

No

270

Each

5.0000

1

1

\*\*

)

(P)

12/08/01

\*D3536-15\*

Gasket

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP002 85604✓	5	
73318	4	
81343	1	

D3536-23

Manufactured

No

270

Each

39.0000

1

1

\*\*

1

(P)

12/08/01

\*D3536-23\*

Gasket

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP	36	
85295	36	
FP002	3	
74510	1	
83377	2	

85295✓

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector	
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

NOTE: Date & initial all entries

# Picklist Print

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Work Order ID: 85825

\*85825\*  
\*D206-642-541\*

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3536-35

Manufactured No

270

Each

15.0000

1

1

\*\*

(SP)

12/08/01

\*D3536-35\*

Gasket

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP002	85605✓	
-------	--------	--

15

81340	4	
-------	---	--

4

82065	11	
-------	----	--

11

D3536-39

Manufactured No

270

Each

9.0000

1

1

\*\*

(SP)

12/08/01

\*D3536-39\*

Gasket

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP	9	
----	---	--

9

82252 ✓	9	
---------	---	--

9

D3535-15

Manufactured No

270

Each

21.0000

1

1

\*\*

(SP)

12/08/01

\*D3535-15\*

Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP001	21	
-------	----	--

21

81354	2	
-------	---	--

2

85291 ✓	19	
---------	----	--

19

D3535-35

Manufactured No

270

Each

28.0000

1

1

\*\*

(SP)

12/08/01

\*D3535-35\*

Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP001	86191-	
-------	--------	--

28

67598	1	
-------	---	--

1

70815	1	
-------	---	--

1

78873	13	
-------	----	--

13

79849	1	
-------	---	--

1

83638	12	
-------	----	--

12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**Picklist Print**

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Work Order ID: 85825

**\*85825\***  
**\*D206-642-541\***

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3535-39

Manufactured No

270

Each

21.0000

1

1

\*\*

1

(SP)

12/08/01

**\*D3535-39\***

Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	21	
69759	1	
74513	2	
81359	18	

D3535-23

Manufactured No

270

Each

8.0000

1

1

\*\*

1

(SP)

12/08/01

**\*D3535-23\***

Wearshoe

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	8	
83375	8	

D3537-3

Manufactured No

270

Each

4.0000

1

1

\*\*

1

(SP)

12/08/01

**\*D3537-3\***

Wearpad

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP002	4	
78836	1	
81363	3	

D3537-1

Manufactured No

270

Each

71.0000

9

9

\*\*

9

(SP)

12/08/01

**\*D3537-1\***

Wearpad

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP002	71	
81362	6	
83254	1	
83255	3	
83256	55	
84091	6	

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

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Work Order ID: 85825

\*85825\*

Parent Item: D206-642-541

\*D206-642-541\*

Parent Item Name: Replacement Skidtube

Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

AN960C10L

\* NAS1149C0332 Purchased  
R

No

122063✓

270

Each

21.0000

80

80

\*\*

80

(20)

12/08/01

\*AN960C10L\*

washer

Location	Loc Qty	Loc Code
----------	---------	----------

ST	21	
----	----	--

107534	21	
--------	----	--

AN960C416

\* NAS1149C0463 Purchased  
R

No

119097✓

270

Each

0.0000

1

1

\*\*

1

(20)

12/08/01

\*AN960C416\*

washer

D3672-1

Manufactured

No

270

Each

1,422.000

2

2

\*\*

2

(20)

12/08/01

\*D3672-1\*

Phenolic Washer

Location	Loc Qty	Loc Code
----------	---------	----------

ST060	1422	
-------	------	--

72229	4	
-------	---	--

76277	13	
-------	----	--

80369	395	
-------	-----	--

83608	500	
-------	-----	--

85222	510	
-------	-----	--

AN3C4A

Purchased

No

270

Each

955.0000

80

80

\*\*

80

(20)

12/08/01

\*AN3C4A\*

BOLT

Location	Loc Qty	Loc Code
----------	---------	----------

ST350	955	
-------	-----	--

120187	31	
--------	----	--

120521	28	
--------	----	--

120769	38	
--------	----	--

121205	842	
--------	-----	--

121556	16	
--------	----	--

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

June-15-12 1:32:42 PM

Page 8

Work Order ID: 85825

\*85825\*

Parent Item: D206-642-541

\*D206-642-541\*

Parent Item Name: Replacement Skidtube

Start Date: 15/06/2012

Required Date: 29/06/2012

Start Qty: 1.00

Required Qty: 1.00

AN4C5A

Purchased No

270 Each 181.0000

\*\*

1

(2P)

12/08/01

\*AN4C5A\*

BOLT

Location	Loc Qty	Loc Code
ST355	181	
112243	135	
119017 ✓	46	

D2646

Manufactured No

270 Each 54.0000

\*\*

1

(2P)

12/08/01

\*D2646\*

Aft Cap

Location	Loc Qty	Loc Code
FP002 85443✓	54	
62678	5	
68280	5	
70945	1	
71070	2	
73294	1	
73825	2	
78018	1	
79562	5	
81974	32	

D3413-1

Manufactured No

270 Each 55.0000

\*\*

1

(2P)

12/08/01

\*D3413-1\*

Ring

Location	Loc Qty	Loc Code
ST420 87253✓	4	
79233	4	
ST464	51	
80224	4	
83307	27	
83867	20	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN CP	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED <i>[initials]</i>	APPROVED <i>[initials]</i>	DRAWING NO. D3274	REV. D SHEET 1 OF 4
DATE 06.12.19	TITLE SKIDTUBE ASSEMBLY		SCALE NTS
A	04.03.15	NEW ISSUE	
B	04.08.09	MOVE SADDLE HOLE: 42.14 WAS 42.76	
C	05.03.16	ADD -043; NEW INSERTS	
D	06.12.19	NEW INSERTS, SS WEARSHOE + GASKET	

RELEASED

07.02.12 *[initials]*

DEO ATTACHED

Qty -041	Qty -043	Part Number	Description
X		D3274-041	SKIDTUBE ASSEMBLY
	X	D3274-043	SKIDTUBE ASSEMBLY
1	1	D2600-1-240	EXTRUSION
1	1	D2646	AFT CAP
12	12	D2649	CROSS BOLT SPACER
12	37	D3275-1	CROSS BOLT SPACER
1	1	D3282-041	FLOAT WEB
1	1	D3285-1	CAP
1	1	D3413-1	RING
1	1	D3415-041	NUT PLATE
1	1	D3535-15	WEARSHOE
1	1	D3535-23	WEARSHOE
1	1	D3535-35	WEARSHOE
1	1	D3535-39	WEARSHOE
1	1	D3536-15	GASKET
1	1	D3536-23	GASKET
1	1	D3536-35	GASKET
1	1	D3536-39	GASKET
9	9	D3537-1	WEARPAD
1	1	D3537-3	WEARPAD
78	78	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130)
80	80	AN3C4A	BOLT
1	1	AN4C5A	BOLT
1	1	AN960C416	WASHER
80	80	AN960C10L	WASHER
2	2	CCR264SS3-3	RIVET
2	2	CR3212-4-03	RIVET
2	2	NAS1515H3L	WASHER

GENERAL NOTES:

1. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2. DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
3. ALL HOLES DRILLED ON CENTERLINES.
4. BOND D3282-041 FLOAT WEB INTO D3274-1/-3 OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
5. WELDING TO BE DONE PER DART QSI 004.
6. FINISH: - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1  
- POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
7. DRILL Ø0.297 HOLES FOR ALS7-1032-130 INSERTS USING DT3274-1T2 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH. SEAL WEARSHOE BOLTS WITH SIKAFLEX -241/-291.
8. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

SHOP COPY  
RETURN TO  
ENGINEERING  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
12/06/15  
ESE/BS  
/MCJ

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

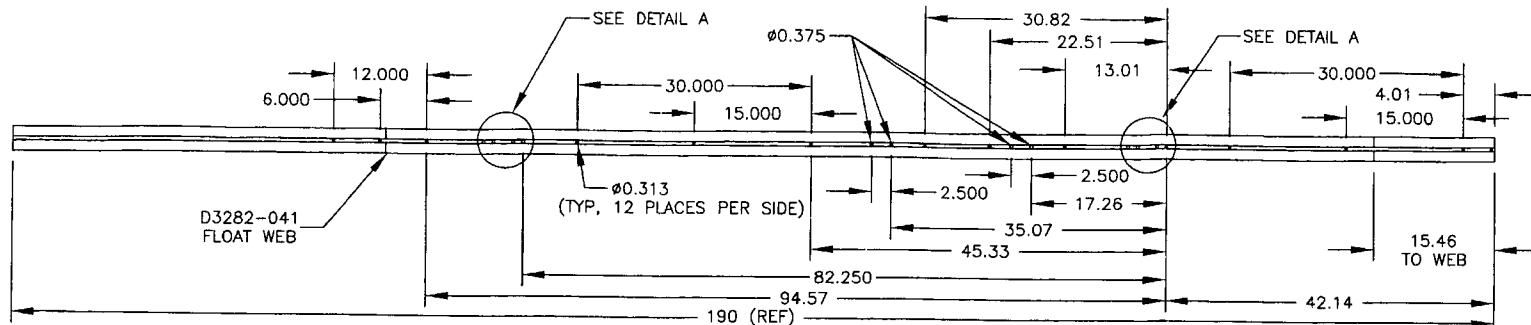
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

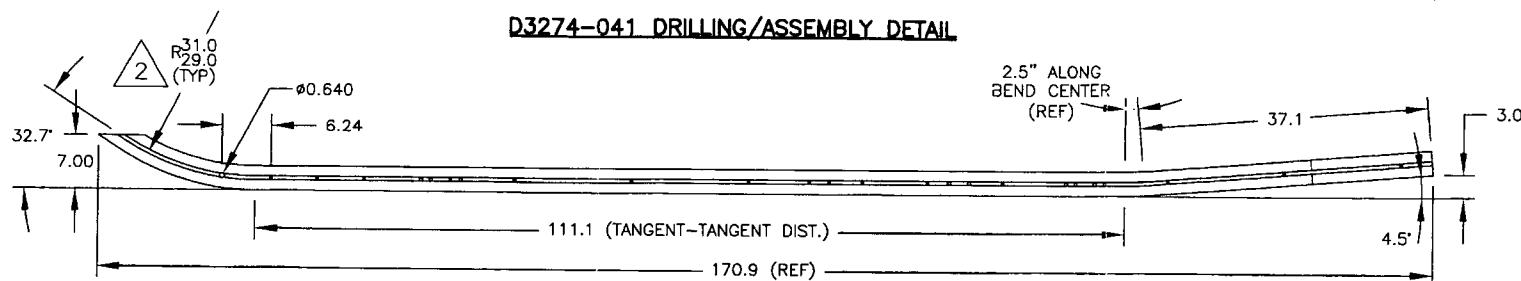
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

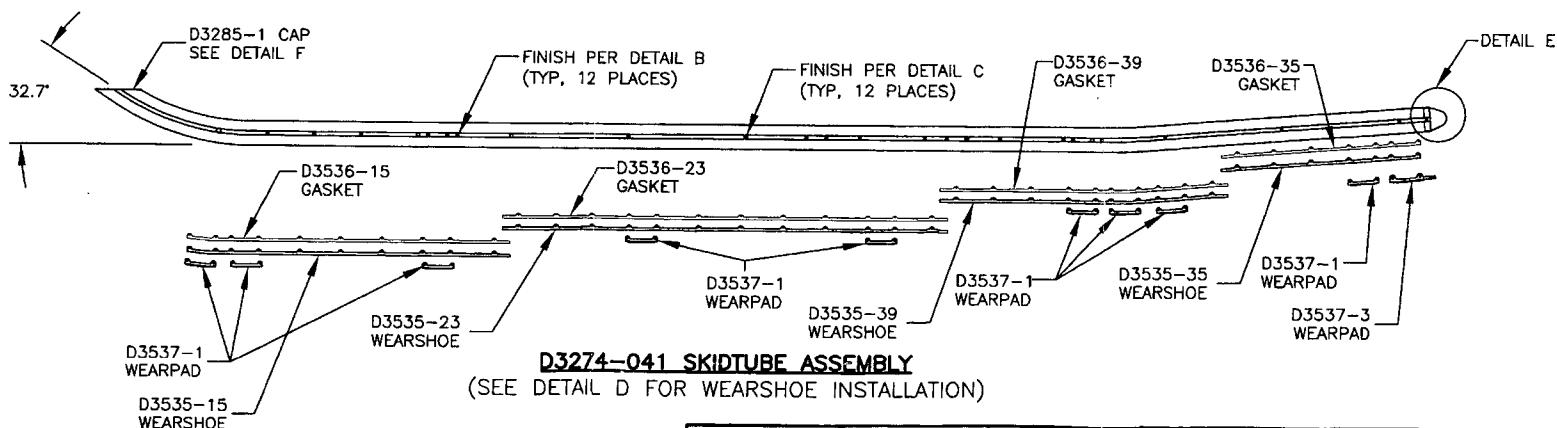
DEO ATTACHED



D3274-041 DRILLING/ASSEMBLY DETAIL



D3274-041 BEND/DRILLING DETAIL



**D3274-041 SKIDTUBE ASSEMBLY**  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

07.02.12

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CHECKED <b>H</b>		APPROVED <b>H</b>	DRAWING NO. <b>D3274</b>		REV. D	
DATE <b>06.12.19</b>		TITLE <b>SKIDTUBE ASSEMBLY</b>			SHEET 2 OF 4	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

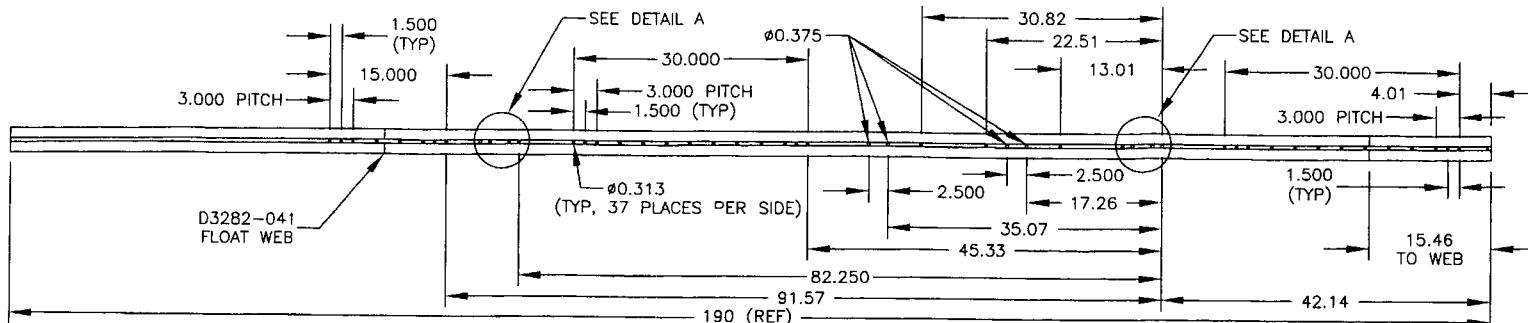
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

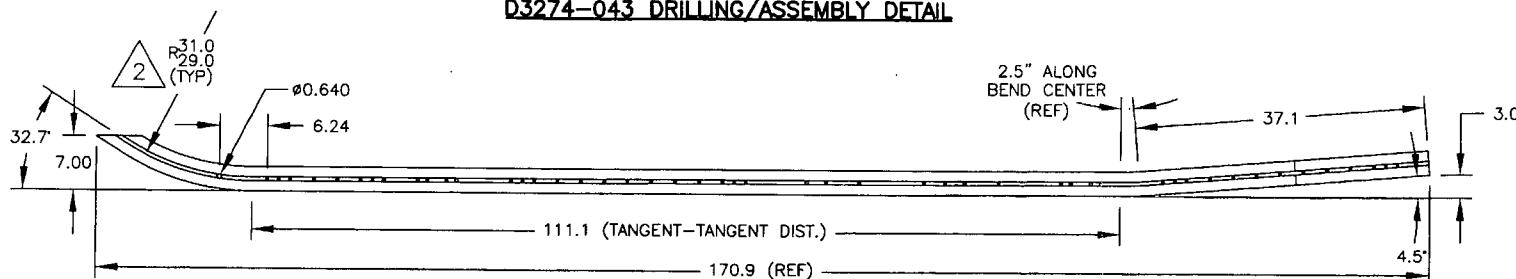
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

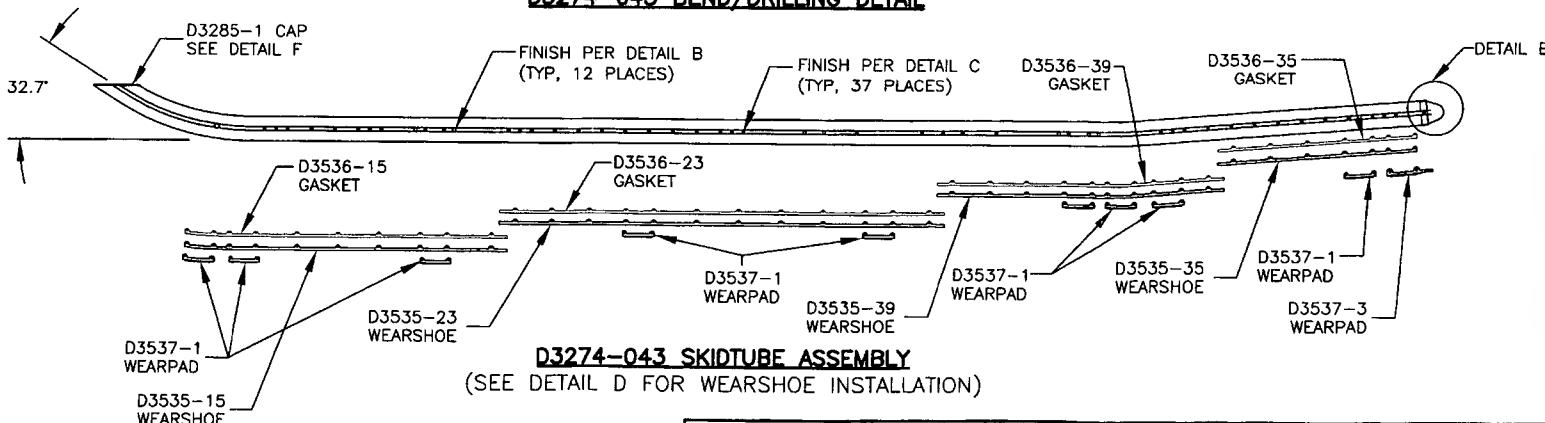
DEO ATTACHED



D3274-043 DRILLING/ASSEMBLY DETAIL



D3274-043 BEND/DRILLING DETAIL



D3274-043 SKIDTUBE ASSEMBLY  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

07.02.12

DESIGN	CP	DRAWN BY	PH	DART	DART AEROSPACE USA, INC.
CHECKED		APPROVED		D3274	PORT HADLOCK, WA
DATE	06.12.19	DRAWING NO.		REV. D	
TITLE		SKIDTUBE ASSEMBLY		SHEET 3 OF 4	
SCALE		1:15			

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85825

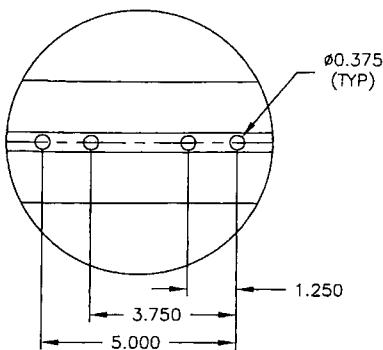
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

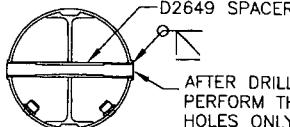
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

### DETAIL A: DRILL DETAIL



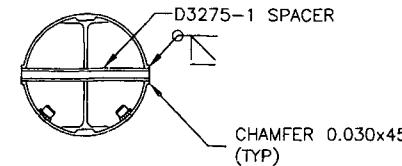
### DETAIL B FOR Ø0.375 HOLES ONLY



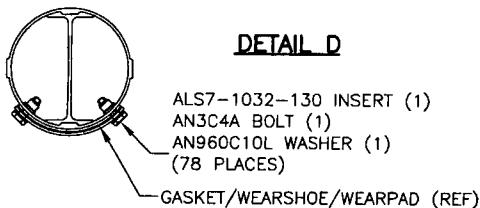
AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.375  
HOLES ONLY:

1. CHAMFER HOLE 0.030x45°
2. INSERT D2649 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE TO Ø0.313x0.75 DEEP

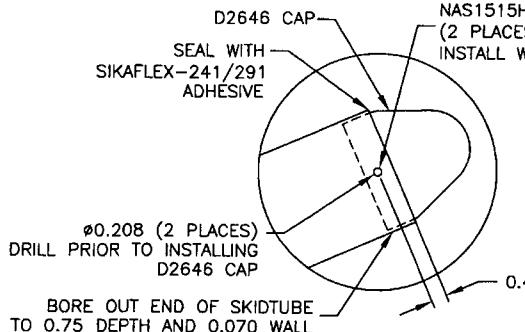
### DETAIL C FOR Ø0.313 HOLES ONLY



### DETAIL D



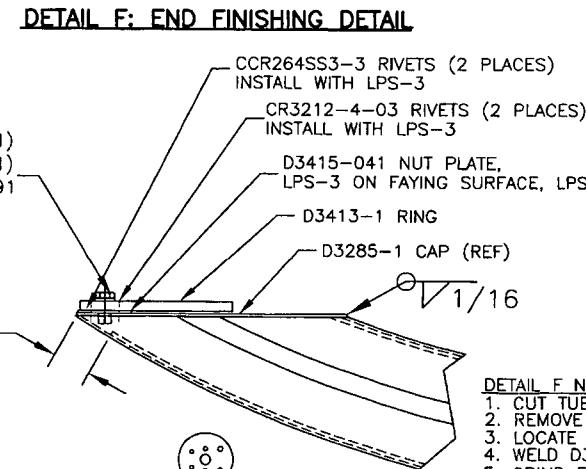
### DETAIL E



AN4C5A BOLT (1)  
AN960C416 WASHER (1)  
INSTALL WITH SIKAFLEX-241/-291

1.0  
REMOVE RIDGE  
ON INSIDE OF  
SKIDTUBE LEAVE  
0.070 MIN.

ORIENTATION  
OF D3415-041



DEO ATTACHED

RELEASED  
07.02.12

### DETAIL F NOTES

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

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CP

DRAWN BY

PH

DART

DART AEROSPACE USA, INC.  
PORT HADLOCK, WA

REV. D

CHECKED

APPROVED

DRAWING NO.

D3274

SHEET 4 OF 4

DATE

06.12.19

TITLE

SKIDTUBE ASSEMBLY

SCALE

1:3

85825

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D3274	TITLE SKIDTUBE ASSEMBLY		REV. D	DART AEROSPACE USA, INC ENGINEERING ORDER	D.E.O. NO. D3274-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>CR</i>	CHECKED <i>AS</i>		MFG. APPR. <i>AM</i>	APPROVED <i>MAP</i>	DE APPR. <i>MAP</i>		
DATE 09.06.17	DATE 09.06.23	DATE 09/06/23	DATE 09/06/23	DATE 09/06/23	DATE 09.06.23		

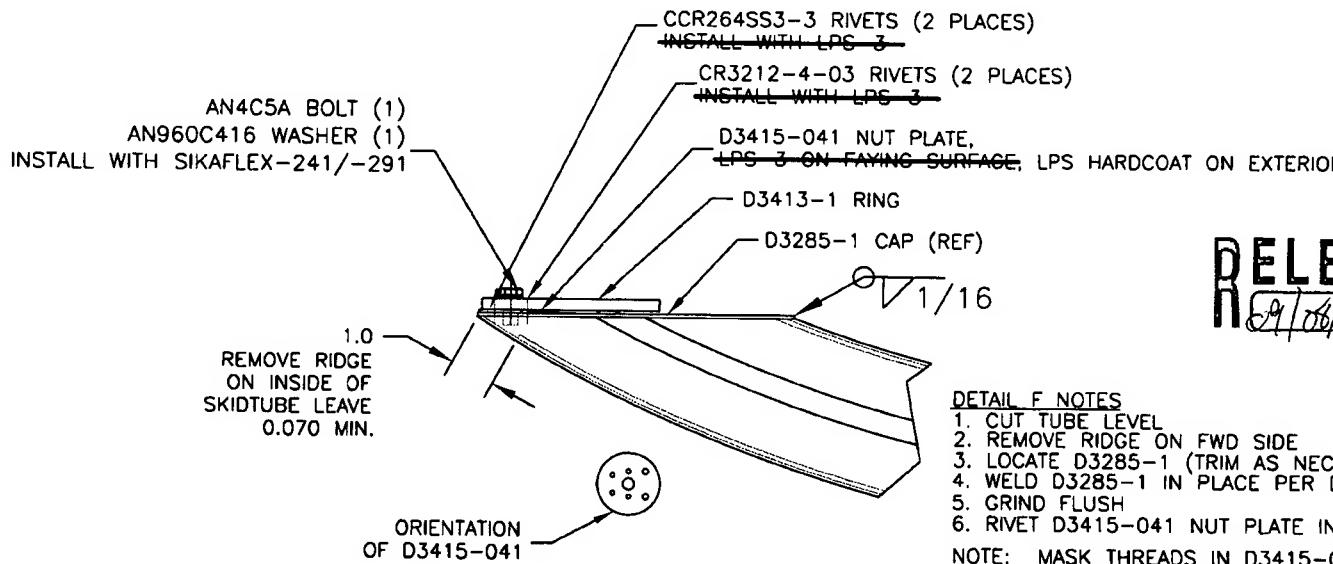
LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

~~AMEND NOTE 8: "SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS 3' AFTER FINISH AND INSTALLATION OF INSERTS.~~  
~~COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF~~  
~~POWDER COATING WITH MEK DEGREASER."~~

**AMEND DETAIL F AS SHOWN:**

es-825

DETAIL F: END FINISHING DETAIL



## DETAIL F NOTES

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 299

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job #: B85361  
Part #: A206-642-541  
Description: Skid  
Welding Process: Tig[] Mig[]  
Base materiel: Alum.  
Current: AC[] DC[]

**TEST REQUIREMENTS AND RESULTS**

Visual:	pass[ <input type="checkbox"/> ]	fail[ <input type="checkbox"/> ]
Incomplete Penetration:	pass[ <input type="checkbox"/> ]	fail[ <input type="checkbox"/> ]
Incomplete Fusion:	pass[ <input type="checkbox"/> ]	fail[ <input type="checkbox"/> ]
Cracks:	pass[ <input checked="" type="checkbox"/> ]	fail[ <input type="checkbox"/> ]
Overlap (cold lap)	pass[ <input checked="" type="checkbox"/> ]	fail[ <input type="checkbox"/> ]
Undercut:	pass[ <input checked="" type="checkbox"/> ]	fail[ <input type="checkbox"/> ]
Pin holes:	pass[ <input checked="" type="checkbox"/> ]	fail[ <input type="checkbox"/> ]
Porosity (surface):	pass[ <input type="checkbox"/> ]	fail[ <input type="checkbox"/> ]
Coloration:	pass[ <input type="checkbox"/> ]	fail[ <input type="checkbox"/> ]
Burn through:	pass[ <input type="checkbox"/> ]	fail[ <input type="checkbox"/> ]

Qualifier Kayid Jewell Date of Test Coupon 12-07-26

Welder Barclay Elliott Date of Test Coupon 12-07-26

The above named individual is qualified in accordance with AWS D17.1.2001 to weld